Message

From: Buckley, Timothy [Buckley.Timothy@epa.gov]
Sent: 9/21/2017 12:06:53 PM
To: Mort, Sandra L [sandy.mort@ncdenr.gov]
CC: Allenbach, Becky [Allenbach.Becky@epa.gov]; Culpepper, Linda [linda.culpepper@ncdenr.gov]; Woosley, Julie [julie.woosley@ncdenr.gov]; Strynar, Mark [Strynar.Mark@epa.gov]
Subject: RE: Questions re EPA-NERL PFAS data - Chemours GW

Sandy,

Thank you for these excellent questions. I forwarded them on to Mark Strynar who provided the following response. I am copying Linda Culpepper, Julie Woosley, and Becky Allenbach as I think they will also be interested.

Tim Buckley

1. Please provide the full chemical name for the PFESA Byproduct 2 listed in Table 2. The last portion of the chemical name was cut off in the final report.

The full name of this CAS # 749836-20-2 is (Ethanesulfonic acid, 2-[1-[difluoro(1,2,2,2-tetrafluoroethoxy)methyl]-1,2,2,2-tetrafluoroethoxy]-1,1,2,2-tetrafluoro-) It does not appear cutoff in the final report that I have.

2. Please verify the CASN for the PFESA (Nafion) Byproduct 1 listed in table 2. The CASN listed is 29311-67-9. I'm asking if it should be CASN 66796-30-3 based on prior information provided by your lab.

The CAS number in the final report (29311-67-9) for PFESA (Nafion) byproduct 1 is correct. In the EPA briefing slides which preceded the final report, and in Strynar et al., 2015 the CAS for the Nafion copolymer (CASN 66796-30-3) is shown. However, in Strynar et al., 2015 Table 1 there is a footnote "b" indicating this is for the Nafion copolymer.

3. The notes on Table 3 indicate the LOD = 10 ng/L. Please verify that this is for all analytes reported.
For the targeted analytes which include GenX and the Legacy PFAS the LOQ was 10 ng/L for the bottom end of the calibration curve. For the non-targeted analysis analytes there is no calibration curve as we have no authentic standards for these analytes, thus we have no LOQ.

4. The Table 3 information notes include the sample dilutions. Do these dilutions apply both to the target analytes and the non-target analytes? Should the reporting limits for the target analytes reflect the 10 ng/L LOD times the noted sample dilution? Same question for the non-target analytes? (i.e., LOD x dilution = analyte reporting limit)

The dilutions apply to both the target as well as the non-target analytes. However, the lower reporting limits of the target analytes are 10 ng/L regardless of the dilutions. The dilutions were used to deal with samples that exceeded the calibration curves on the top end. If a sample did not have values that exceeded the calibration curve, that value was used. The lower LOQ remains unchanged. The values reported in Table 3 already include these calculations. With the exception of reported values flagged with "*" all diluted samples caused the analyte to fall within the calibration curve range.

5. In the Sun et al, EST (2016) paper the non-target analytes PFMOPrA, PFMOBA and PFO4DA were reported in the drinking water sourced from the Cape Fear River. Neither PFMOPrA, PFMOBA or PFO4DA were reported for the groundwater. Please clarify if this was because these 3 non-target analytes (NTAs) were not detected in the GW, or if the GW analysis did not include these 3 NTAs.

The analytes reported to NCDEQ in all samples did not include these compounds (PFMOPrA, PFMOBA and PFO4DA) as they were minor players in prior work. The analytes chosen for inclusion in the NCDEQ reports included GenX (PFPrOPrA), PFMOAA, PFO2HxA, and PFO3OA as they were suggested by NCDEQ to be included based on the Sun et al.,

2016 findings. I am unable to confirm if these analytes are present in the GW samples, however I can confirm they were not included in the NTA we performed. If needed I can go back and check for the presence of these analytes.

6. The text indicates that there is a conservative order-of-magnitude uncertainty in the NTA concentrations reported. Please verify that the same level of uncertainty is estimated for both the NTA PFECA and PFESA since the NTA concentrations are generated relative to the PFECA GenX instrument response.
The conservative order of magnitude uncertainty applies to all the NTA analytes. Though the PFECA (GenX) is used to estimate the NTA PFECAs, we are unsure if the PFESAs respond any differently. As we have no authentic standard for the PFESAs thus far we have no way to tell if the PFECAs or PFESAs respond differerntly.

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(Ex. 6 Personal Privacy (PP))

From: Mort, Sandra L [mailto:sandy.mort@ncdenr.gov]
Sent: Wednesday, September 20, 2017 10:41 AM
To: Buckley, Timothy <Buckley.Timothy@epa.gov>
Subject: Questions re EPA-NERL PFAS data - Chemours GW

Dr. Buckley –
I am requesting the following clarifications / verification for the PFAS data generated by NERL on the August 2017 groundwater (GW) samples submitted by NC DEQ Division of Waste Management (see the attached report):

1. Please provide the full chemical name for the PFESA Byproduct 2 listed in Table 2. The last portion of the chemical name was cut off in the final report.
2. Please verify the CASN for the PFESA (Nafion) Byproduct 1 listed in table 2. The CASN listed is 29311-67-9. I'm asking if it should be CASN 66796-30-3 based on prior information provided by your lab.
3. The notes on Table 3 indicate the LOD = 10 ng/L. Please verify that this is for all analytes reported.
4. The Table 3 information notes include the sample dilutions. Do these dilutions apply both to the target analytes and the non-target analytes? Should the reporting limits for the target analytes reflect the 10 ng/L LOD times the noted sample dilution? Same question for the non-target analytes? (i.e., LOD x dilution = analyte reporting limit)
5. In the Sun et al, EST (2016) paper the non-target analytes PFMOPrA, PFMOBA and PFO4DA were reported in the drinking water sourced from the Cape Fear River. Neither PFMOPrA, PFMOBA or PFO4DA were reported for the groundwater. Please clarify if this was because these 3 non-target analytes (NTAs) were not detected in the GW, or if the GW analysis did not include these 3 NTAs.
6. The text indicates that there is a conservative order-of-magnitude uncertainty in the NTA concentrations reported. Please verify that the same level of uncertainty is estimated for both the NTA PFECA and PFESA since the NTA concentrations are generated relative to the PFECA GenX instrument response.

Thank you & your staff again for your efforts.
b/r
Sandy Mort

Sandy Mort, Ph.D., M.S.

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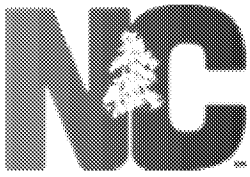

Nothing Compares